REMARKS

Claim Amendments

Claim 11 was amended for purposes of correcting an apparent typographical error.

Rejections under 35 U.S.C. § 103(a) – Suggestion or Motivation as to Claims 1-21

By Office Action of June 7, 2005, all pending 21 claims were rejected under 35 U.S.C. § 103(a) as being unpatentable. A combination of Kyrtsos and Aduddell was used for claims 1 through 4, while a combination of Kyrtsos and Aduddell and Magiawala et al. was used for claims 5-11 and 12-20. Each of these rejections asserts that one of ordinary skill in the art would be motivated to combine these references to increase safety. Applicants' respectfully traverse each of these rejections.

The USPTO has recognized three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. MPEP 2143.01. The rejections of June 7, 2005 do not identify any of these permissible sources for the suggestion or motivation to combine. More specifically, the rejections do not identify any prior art references for a suggestion or motivation, do not explain how the nature of the problem to be solved provides a suggestion or motivation, and do not assert how the suggestion would come from the knowledge of one of ordinary skill in the art.

Indeed, it could be asserted that arguably all persons of ordinary skill in the art in all art fields and industries have a general interest in making products more safe. Regardless of whether such is true, a rejection based on concerns for increasing safety is improper because such does not identify a specific suggestion or motivation that would lead one of ordinary skill in the art to make the specific combinations being claimed in any application. In relation to the present invention, there may be numerous features that can be combined with a tire to make vehicle operation more safe, but such does not provide any suggestion or motivation of what specific features should be combined or how.

It is also respectfully submitted that this improper basis for rejection reflects an impermissible use of hindsight. More specifically, only the present application teaches that the claimed combination of features can be used to monitor a tire for a damage condition using a neural network. For example, only the present application discloses how a neural network can be used to monitor for a potential tire damage condition. The present rejections of Applicants' claims provide no explanation of how general concerns for improving vehicle safety would lead one of ordinary skill in the art to select a neural network for combination with other elements as set forth in the claims.

In addition, only the present application indicates that a tire monitoring system with a neural network as set forth in the claims is advantageous to, for example, a trained operator who simply listens to the sounds made by a vehicle tire's during operation. See pages 1-2 of the present application. Indeed, Aduddel indicates that a device that simply conveys sounds to the ear of a trained operator is preferred for safety. See Aduddel, Col. 1. In contrast, the present rejections of Applicants claims provide no assertion or explanation of how the prior art suggests that applicants' claimed invention, which utilizes a neural network, is somehow safer or preferred for safety to the trained ear of an operator as described in Aduddel. Furthermore, the current rejections rest on the conclusion that the invention set forth in Applicant's claims are somehow safer and therefore preferred or suggested – a conclusion that only comes from the impermissible use of the disclosures of the present application in hindsight.

Therefore, Applicants respectfully submit that the rejections of the claims under 35 U.S.C. 103(a) should be removed because for each rejection no suggestion or motivation to combine the references was cited as required for a proper rejection. Applicants respectfully submit that the claims are in condition for allowance.

Rejections under 35 U.S.C. § 103(a) – Claims 1-4

Claims 1 through 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable in view of Kyrtsos in view of Aduddell. Applicants respectfully traverse this rejection and incorporate by reference all previous Responses to these references as previously asserted by the Examiner in prior office actions.

As previously explained above, the current rejection does not properly identify a suggestion or motivation to combine Kyrtsos and Aduddell. Furthermore, as will be described, these references simply cannot be combined without impermissibly changing the basic principles of operation of each reference.

Aduddell discloses an audible vehicle monitoring apparatus that seeks to provide for a single monitoring device capable of simultaneously monitoring tire recap conditions, wheel bearing conditions, and universal joint conditions (see Aduddell at column 2, lines 25-29; and the title of Aduddell). Aduddell enables the driver of the vehicle to be able to listen to the sounds produced at the undercarriage of the vehicle so as to determine with his or her trained ear whether a tire recap condition, wheel bearing condition, or a universal joint condition that indicates a problem in the vehicle is occurring. The electronics in Aduddell simply transmit sound from one location to the other and do not process any of the sounds so as to arrive at a particular conclusion. All of the processing of the sounds in the design of Aduddell comes entirely from the **driver** of the vehicle. As such, the signal processing device 32 in Aduddell does not include a neural network as required by claims 1 through 4.

Kyrtsos is specifically directed towards a method of monitoring the drive line of a vehicle. Kyrtsos specifically defines the drive line as including the parts of the vehicle that connect the transmission to the driving axles of the vehicle - which does not include tires (see Kyrtsos at column 2, lines 39-41). As such, Kyrtsos does not monitor for a potential damage condition as required by 1 through 4.

If a proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not

sufficient to render the claims prima facie obvious. As stated above, Aduddell is directed towards monitoring by way of a trained ear of a driver while Kyrtsos uses a control 26 to detect problems in a drive line. Therefore, the principle of operation of the two references is completely opposite from one another. Incorporation of Kyrtsos into Aduddell would completely change the principle of operation in Aduddell because the resulting device would not function so as to allow the driver to audibly monitor for the aforementioned conditions.

Therefore, for the reasons set forth here and above, Applicants respectfully submit that this rejection of claims 1 though 4 should be removed as the claims are in a condition for allowance.

Rejections under 35 U.S.C. § 103(a) – Claims 5-20

Claims 5 through 11, and 12 through 20 are rejected as being unpatentable in view of Kyrtsos in view of Aududdell and Magiawala et al. However, in the Office Action of June 7, 2005, the discussion for this rejection of claims 5 through 11 discusses only claims 12-20. Thus, Applicants will addresses these rejections together. Applicants respectfully traverse this rejection and incorporate by reference all previous Responses to these references as previously asserted by the Examiner in prior office actions.

As previously explained above, the current rejection does not properly identify a suggestion or motivation to combine Kyrtsos and Aduddell and Magiawala et al. Furthermore, as already set forth above with regard to claims 1 and 4, it is respectfully submitted that Aduddell does not contain a neural network as required by claims 5-20, Kyrtsos does not monitor for a potential damage condition of a tire as required by claims 5-20, and incorporation of Kyrtsos into

Aduddell would completely change the principle of operation in Aduddell because the resulting device would not function so as to allow the driver to audibly monitor for the aforementioned condition.

The addition of Magiawala et el. does not overcome any of these shortcomings. Magiawala et el. is directed to tread wear, shock absorber performance, balance condition, and rotation speed (Col. 1, lines 33-44) – but nowhere discloses an output signal based on potential damage condition of the tire as required by claims 5-10. Similarly, claims 5-20 require at least one sound monitoring device. Magiawala, et al. does not disclose a sound monitoring device as is expressly required by claims 5-20. Instead, Magiawala, et al. employs signal processing circuits that obtain information from a radio accelerometer 2, a lateral accelerometer 4, and temperature and pressure sensors 6 (see Magiawala, et al. at Col. 3, l. 45 to Col. 4, l. 4). Finally, claims 5-20 require a sound monitoring device mountable or carried on a vehicle. Magiawala et al. requires that the sensors are mounted either inside the tire or on the wheel rim. See Col. 3, lines 46-49. Such a location is required because Magiawala et al. is using sensors that measure lateral and/or radial acceleration of the tire itself. Mounting the sensors of Magiawala et al. on the vehicle itself would destroy the principle of operation of Magiawala et al. and prevent it from functioning properly.

Furthermore, claims 12 through 21 each call for an apparatus capable of indicating to a user of the vehicle that the tire is experiencing some amount of tread belt separation. The combination of Aduddell and Kyrtsos does not result in an apparatus that is capable of detecting tread belt separation because both of these references completely lack any mention of tread belt separation. Aduddell is directed towards an audible vehicle monitoring apparatus capable of

detecting a defective tire recap condition, wheel bearing condition, or universal joint condition (see Aduddell at column 2, lines 25-29). Aduddell does not disclose an audible vehicle monitoring apparatus for measuring tread belt separation. Likewise, Kyrtsos is not directed towards an apparatus for measuring tread belt separation. Kyrtsos is specifically directed towards a method of monitoring the drive line of a vehicle. Kyrtsos specifically defines the drive line as including the parts of the vehicle that connect the transmission to the driving axels of the vehicle (see Kyrtsos at column 2, lines 39-41). Neither Magiawala, et al. or any other references cited by the Examiner overcome the deficiencies of Aduddell or Kyrtsos.

Therefore, even if Aduddell and Kyrtsos and Magiawala, et al. were combined with one another, the resulting device would still not include an apparatus capable of indicating to a user of a vehicle that a tire is experiencing tread belt separation. A *prima facie* case of obviousness cannot be maintained because the combination of references does not disclose all of the claim elements of claims 12 through 21 of the present application. Applicants respectfully request removal of this rejection and allowance of the claims to issue.

CONCLUSION

Inasmuch as all outstanding issues have been addressed, it is respectfully submitted that the present application is in complete condition for issuance of a formal Notice of Allowance, an action to such effect is earnestly solicited. The Examiner is invited to telephone the undersigned at his convenience should only minor issues remain after consideration of this response in order to permit early resolution of the same or if he has any questions regarding this matter.

A fee for an extension of time to respond to this action is included. However, if any additional fee or extension of time is required to obtain the entry of this response, the undersigned hereby petitions the Commissioner to grant any necessary time and extension and authorize its charging deposit account no. 04-1403 for any such fee not submitted herewith.

Respectfully submitted,

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